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**Abstract**

# NUCLEAR POWER IN KARACHI ELECTRIC SUPPLY SYSTEM

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The Power Commission of Pakistan has come to the conclusion that over the next few decades there will be a large gap between demand and supply of electricity that can be generated from indigenous conventional sources so far discovered. Nuclear power therefore is the only alternative source which can be expected to fill this gap gradually on a long-term basis. The only indigenous fuel available at Karachi is natural gas which is supplied through a 16" pipeline, the delivery capacity of which will soon be saturated if power gaps are met by gas-fired stations. It has therefore been decided to establish a 132 MW natural uranium fueled heavy water moderated and cooled reactor, scheduled to be commissioned by 1969, fourteen miles west of Karachi. The total generating capacity of Karachi system at that time will be 335 MW with a peak demand of 300 MW, which includes power requirements of a steel mill likely to be in operation by that time. The economic feasibility studies indicate that under certain financial terms usually obtainable for power projects in Pakistan the cost of generation offered from the nuclear plant would be lower than from a gas-fired station of equipment capacity for plant factors up to 70% and above. As it is intended to operate the nuclear plant as a base load station the plant factor is expected to be higher. Although the construction cost of nuclear power stations is almost double the cost of a gas-fired station of equivalent capacity, savings on fuel, which are expected to be of the order of $2 million per year, will result in net savings on the operation of the plant of the order of $1 million per year.